



## Claims

1. An isolated nucleic acid molecule comprising a sequence encoding an SSE polypeptide.

2. The nucleic acid molecule of claim 1, wherein said sequence encodes an SSE polypeptide having at least 30% identity with the amino acid sequence shown in Fig. 2B (SEQ ID NO:2).

3. The nucleic acid molecule of claim 1, wherein said sequence encodes an SSE polypeptide that, when expressed in a cell of a plant, modifies the production of food storage reserves.

4. The nucleic acid molecule of claim 1, wherein said sequence encodes an SSE polypeptide that, when expressed in a cell of a plant, facilitates the intracellular transport of a storage protein.

5. The nucleic acid molecule of claim 1, wherein said sequence encodes an SSE polypeptide that, when expressed in a cell of a plant, facilitates the formation of protein bodies.

6. The nucleic acid molecule of claim 1, wherein said sequence encodes an SSE polypeptide that, when expressed in a cell of a plant, facilitates the formation of oil bodies.

7. The nucleic acid molecule of claim 1, wherein said nucleic acid molecule is cDNA.

8. An isolated nucleic acid molecule comprising a sequence encoding an SSE polypeptide, wherein said isolated nucleic acid molecule hybridizes specifically to the nucleic acid molecule comprising the cDNA of Fig. 2A (SEQ ID NO:1).

9. The nucleic acid molecule of claim 1, wherein said sequence encodes an SSE polypeptide having at least 30% identity with the amino acid sequence shown in Fig. 2B (SEQ ID NO:2).

10. The isolated nucleic acid molecule of claim 1 or 8, wherein said nucleic acid molecule is operably linked to a promoter functional in a plant cell.

11. An expression vector comprising the nucleic acid molecule of claim 1 or 8, said vector being capable of directing expression of the polypeptide encoded by said nucleic acid molecule.

12. A cell comprising the isolated nucleic acid molecule of claim 1 or 8.

13. The cell of claim 12, wherein said cell is a plant cell.

14. The cell of claim 12, wherein said cell is a bacterial cell.

15. The cell of claim 12, wherein said bacterial cell is *Agrobacterium*.

16. A transgenic plant or transgenic plant component comprising a nucleic

Sub 157  
acid molecule of claim 1 or 8, wherein said nucleic acid molecule is expressed in said transgenic plant or said transgenic plant component.

17. The plant or plant component of claim 16, wherein said transgenic plant or transgenic plant component is an angiosperm.

5 18. The plant or plant component of claim 16, wherein said transgenic plant or transgenic plant component is a dicot.

19. The plant or plant component of claim 16, wherein said transgenic plant or transgenic plant component is a cruciferous plant.

10 20. The plant or plant component of claim 16, wherein said transgenic plant or transgenic plant component is a monocot.

Sub 16  
21. A seed from a transgenic plant or transgenic plant component of claim 16.

22. A cell from a transgenic plant or transgenic plant component of claim 16.

15 Sub 17  
23. An expression vector for producing antisense SSE RNA.

24. A transgenic plant or transgenic plant component comprising the vector of claim 23.

25. A seed from a transgenic plant or transgenic plant component of claim

24.

26. A cell from a transgenic plant or transgenic plant component of claim  
24.

27. A substantially pure SSE polypeptide comprising an amino acid  
5 sequence having at least 30% identity to the amino acid sequence of Fig. 2B (SEQ ID  
NO:2).

28. The polypeptide of claim 27, wherein said polypeptide modifies the  
production of food storage reserves.

29. The polypeptide of claim 27, wherein said polypeptide facilitates the  
10 intracellular transport of a storage protein.

30. The polypeptide of claim 27, wherein said polypeptide facilitates the  
formation of protein bodies.

31. The polypeptide of claim 27, wherein said polypeptide facilitates the  
15 formation of oil bodies.

32. A method of producing an SSE polypeptide, said method comprising the  
steps of:

(a) providing a cell transformed with a nucleic acid molecule of claim 1 or 8  
positioned for expression in the cell;

20 (b) culturing the transformed cell under conditions for expressing the nucleic  
acid molecule; and

(c) recovering the SSE polypeptide.

33. A recombinant SSE polypeptide produced according to the method of claim 32.

34. A substantially pure antibody that specifically recognizes and binds to an  
5 SSE polypeptide or a portion thereof.

35. The antibody of claim 34, wherein said antibody recognizes and binds to a recombinant SSE polypeptide or a portion thereof.

36. A method of isolating an SSE gene or fragment thereof, said method comprising the steps of:

5 (a) contacting the nucleic acid molecule of Fig. 2A (SEQ ID NO:1) or a portion thereof with a nucleic acid preparation from a plant cell under hybridization conditions providing detection of nucleic acid sequences having at least 30% or greater sequence identity to the nucleic acid sequence of Fig. 2A (SEQ ID NO:1); and

(b) isolating said hybridizing nucleic acid sequences.

10 37. A method of isolating an SSE gene or fragment thereof, said method comprising the steps of:

(a) providing a sample of plant cell DNA;

(b) providing a pair of oligonucleotides having sequence identity to a region of the nucleic acid of Fig. 2A (SEQ ID NO:1);

15 (c) contacting the pair of oligonucleotides with said plant cell DNA under conditions suitable for polymerase chain reaction-mediated DNA amplification; and

(d) isolating the amplified SSE gene or fragment thereof.

38. The method of claim 37, wherein said amplification step is carried out using a sample of cDNA prepared from a plant cell.

39. The method of claim 37, wherein said pair of oligonucleotides are based on a sequence encoding an SSE polypeptide, wherein the SSE polypeptide is at least 30% identical to the amino acid sequence of Fig. 2B (SEQ ID NO:2).

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